

MAPLEWOOD NATURE CENTER 4-6th Grades CURRICULUM - 2015-16

New! - **ENERGY EXPLORERS** (All seasons - 2 hours at the Nature Center or as Outreach at your school)

FOURTH - SIXTH GRADES

Choose from many different energy stations to meet your classroom's interests and educational needs. Play with solar panels and construct a simple electric circuit. Learn how to detect different waves of light from the spectrum! Go on an indoor/outdoor bingo hike to find potential and kinetic energy. Check out the Nature Center's solar panels and learn more about renewable energy. Trace the energy pathways with our energy toys!

4.2.3.2.1 Generating Heat Energy

4.2.3.2.2 Construct Simple Electric Circuits.

5.3.4.1.1 Identify renewable and non-renewable energy and material resources that are found in Minnesota and describe how they are used.

5.3.4.1.2 Give examples of how mineral and energy resources are obtained and processed and how that processing modifies their properties to make them more useful. For example: Iron ore, biofuels, or coal.

6.2.3.1.3 Use wave properties of light to explain reflection, refraction and the color spectrum.

6.2.3.2.1 Differentiate between kinetic and potential energy and analyze situations where kinetic energy is converted to potential energy and vice versa.

6.2.3.2.2 Trace the changes of energy forms, including thermal, electrical, chemical, mechanical or others as energy is used in devices.

PONDER THE POND (September, October and April, May - 2 hour program at Nature Center)

FOURTH - FIFTH GRADES

Collect and study small pond invertebrates to examine their underwater adaptations. Follow rainwater pathways, and explore different parts of wetland habitat at the Maplewood Nature Center. Learn about the Chinese mystery snail, and how you can help reduce the spread of invasive plants and animals. Conduct a test to identify the gas produced by anaerobic bacteria from the pond mud.

4.3.2.3.1 Water Cycle.

4.3.4.1.1 Water Supplies & Uses.

5.3.4.1.3 Compare the impact of individual decisions on natural systems.

5.4.1.1.1 Plant and animal structures.

5.4.2.1.1 Describe a natural system in Minnesota, such as a wetland, prairie, or garden.

5.4.2.1.2 Explain what would happen to a system such as a wetland, prairie or garden if one of its parts were changed.

WATERSHED WATCHERS SERVICE LEARNING (4 lessons booked during March-June)

FOURTH - FIFTH GRADES

Help your students learn how our everyday choices affect the water quality of our lakes, rivers and streams. Students participate in service projects that help protect the watershed. This comprehensive program includes up to 4 lessons that begin in March and are completed in late spring:

1 hour classroom session, *What's a Raingarden?* and *Maps & Models*

2 hour nature center field trip, *Pond Invertebrate Sampling*

2 hour service project, *Planting a Raingarden*

Note: Bus transportation may be funded by the local Watershed District.

4.3.2.3.1 Identify where water collects on Earth, including atmosphere, ground, and surface water, and describe how water moves through the earth system using the processes of evaporation, condensation and precipitation.

4.3.4.1.1 Describe how the methods people utilize to obtain and use water in their homes and communities can affect water supply and quality.

5.3.4.1.3 Compare the impact of individual decisions on natural systems.

5.4.1.1.1 Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.

5.4.2.1.1 Describe a natural system in Minnesota, such as a wetland, prairie, or garden.

5.4.2.1.2 Explain what would happen to a system such as a wetland, prairie or garden if one of its parts were changed.

WHERE TWO WORLDS MEET (4 hour sessions available January 27- 29th and February 2- 5th)

FOURTH - FIFTH GRADES - Recommend early booking

Contrast the cultures of the Anishanaabe Indians and the French Voyageurs at the time of the Fur Trade. Students step back in time to participate in interactive role-plays and examine the materials and technologies of both cultures. They learn old-time skills such as snowshoeing, trading, making a spark with flint & steel, and sewing a pouch. Students bring a lunch to eat on-site.

MN SCIENCE STANDARDS:

4.1.3.1.1 Describe a situation in which one invention led to other inventions.

5.3.4.1.3 Compare the impact of individual decisions on natural systems.

5.1.3.2.1 Describe how science and engineering influence local traditions and beliefs.

MN GEOGRAPHY STANDARDS:

4.2.3.5.1 Describe a market as any place or manner in which buyers & sellers interact; make exchanges.

5.4.1.2.2 Explain a historical event from multiple perspectives.

BUCKTHORN BUSTERS (October/November - 4 hour program at Nature Center or Neighborhood Preserve)

FIFTH GRADE

Learn about the invasive species called buckthorn, the “Wicked Weed” which competes with native species and threatens to take over our native oak woodlands. Identify several kinds of oak and other native plants and animals and learn about their interdependence as a plant community. Help remove buckthorn and plant native seeds in its place. Use binoculars to identify and observe birds in their habitat. Students bring a lunch to eat on-site.

5.3.4.1.3 Compare the impact of individual decisions on natural systems.

5.4.1.1.1 Describe how plant and animal structures and their functions provide an advantage for survival in a given natural system.

5.4.2.1.2 Explain what would happen to a system such as a wetland, prairie or garden if one of its parts were changed.

COMING in 2016 - Pollinator Citizen Science (June-September) at Fish Creek Preserve (4th - 8th grades)

- Identification of prairie plants and their pollinators
- Sweep netting and Identification of insect groups with emphasis on bees
- Kid-friendly Citizen Science Monitoring - Monarch tagging, Bumblebee survey, Photography, etc
- Restoration Projects – Planting native plants, seed collecting and sowing